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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,972	07/14/2003	Kristian Leo	10191/3272	5911
26646	7590	01/03/2005	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			DOUGHERTY, THOMAS M	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/618,972	<b>Applicant(s)</b> LEO ET AL.	
	<b>Examiner</b> Thomas M. Dougherty	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>703</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano (JP 1-287977) in view of Goto (JP 5-136477). Asano shows (fig. 1) a piezoelectric component (see TITLE) comprising: a piezoelectric material) actuator (1) having a coating made of a heat conductive elastomer (see PURPOSE), which includes a filler manufactured based on at least one of aluminum dioxide, titanium dioxide, boron nitride, aluminum nitride (see line 1 of the CONSTITUTION), silicon carbide and silicon dioxide.

The filler has a grain size of between 0.1  $\mu\text{m}$  and 100  $\mu\text{m}$ . See CONSTITUTION, lines 9 and 10.

The grain size is between 1  $\mu\text{m}$  and 15  $\mu\text{m}$ . Again see lines 9 and 10 of the CONSTITUTION.

A proportion of the filler in the elastomer amounts to between 20 weight% and 79 weight%. P. 440, column 2, line 17. See also figure 4, which shows a percentage of AlN filler versus heat conduction and which teaches a range of 0% to 80%.

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The proportion amounts to between 50 weight% and 60 weight%. Again see figure 4, which shows a percentage of AlN filler versus heat conduction and which teaches a range of 0% to 80%.

The elastomer includes a bonding agent. Line 1 of the PURPOSE notes that an epoxy is employed.

By sight, the coating has a thickness of less than 200  $\mu\text{m}$ . Note that the dimensions of the actuator alone are given at col. 2, line 25, page 404, and that at line 28 of that page it is noted that the inner electrodes 5 are spaced 100  $\mu\text{m}$ .

Asano does not specifically note that the actuator is ceramic. He does not note use of silicon dioxide for his filler.

Goto shows (fig. 1) a piezoelectric component (see TITLE) comprising: a ceramic material actuator (1) having a coating made of a heat conductive material which includes a material manufactured based on at least one of aluminum dioxide, titanium dioxide, boron nitrite, aluminum nitride, silicon carbide and silicon dioxide (see line 9 of the CONSTITUTION).

Goto does not note a specific elastomer coating with silicon dioxide in it, however his coating, as noted is silicon dioxide. It would have been obvious to one having ordinary skill in the art to employ silicon dioxide as a coating material in the device of Asano for use as his filler because it has insulative properties, therefore it can be relied to prevent short circuits as well as provide protection against discharge damage on the ceramic surface as noted in the PURPOSE. It would also have been obvious to one of ordinary skill in the art to employ a ceramic material in the device of Asano, if it is not

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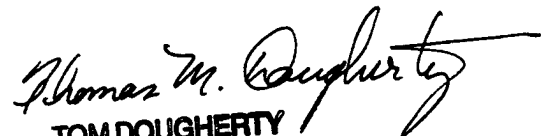
already employed, since he does not note the material, because ceramics are so widely used for piezoelectric materials that their characteristics are well known and they are readily available.

Additionally, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ ceramic material as well as silicon dioxide or the other cited materials, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

tmd  
tmd

December 28, 2004

  
TOM DOUGHERTY  
PRIMARY EXAMINER